

APPLICATION FOR A CERTIFICATE OF APPROPRIATENESS – STAFF REPORT

COA-0031-2019 814 OBERLIN ROAD

Applicant: PRESERVATION NORTH CAROLINA

Received: 3/12/19

Meeting Date(s):

Submission date + 90 days: 6/10/19

1) 4/25/19 2) **5/23/19** 3)

INTRODUCTION TO THE APPLICATION

Raleigh Historic Landmark: Plummer T Hall House & Willis Graves House

Nature of Project: Install painted PVC front porch floors

Staff Notes:

- The following COA applications have previously been approved:
 - 124-17-CA – Relocation of Plummer T Hall house on same lot; relocation of Willis Graves house from 802 Oberlin Rd to 814 Oberlin Rd; installation of foundations, walkways, parking, deck and ADA ramp; removal of non-historic additions; removal of aluminum siding; construction of new additions
 - 059-18-CA – Landscape master plan; install 12' sculpture; remove non-historic chimney (Hall House); remove non-historic windows and replace (Hall House)
- COAs mentioned are available for review.
- **The application was deferred at the April 2019 COA Committee meeting. No additional materials were received in support of the application prior to issuance of the staff report, thus no additional comments appear below.**

APPLICABLE SECTIONS OF GUIDELINES and DESCRIPTION OF PROJECT

<i>Sections</i>	<i>Topic</i>	<i>Description of Work</i>
2.1	Wood	Install painted PVC front porch floors
2.8	Entrances, Porches and Balconies	Install painted PVC front porch floors

STAFF REPORT

Based on the information contained in the application and staff's evaluation:

- A. Installing painted front porch floors is not incongruous according to *Guidelines* 2.1.1, 2.1.5, 2.8.5; however, installing painted PVC front porch floors **may be** incongruous according to *Guidelines* 2.1.5, 2.8.5 and the following suggested facts:

- 1* Previous applications (COA 124-17-CA, and 059-18-CA) were approved for prepping and moving both houses, removing existing additions, constructing new foundations and additions, and installing a master landscape plan.
- 2* According to the applicant, two requests are included in the application; amending the approved condition 4c (Hall House front porch flooring) to use a different material than the yellow pine previously approved for COA 124-17-CA, and also approving new porch flooring for the front porch of the Graves House. In both cases, the applicant requests using a synthetic tongue-and-groove material in place of the traditional tongue-and-groove wood decking.
- 3* From the Things to Consider As You Plan section of the *Design Guidelines 2.1 Wood*:
“Although wood is a renewable resource, fast growth new wood is less resistant to decay than the denser old growth wood it is replacing. Specifying decay-resistant wood species and priming the back and ends with oil-based paint prior to installation can extend the lifespan of replacement wood.”
- 4* Also from the Things to Consider As You Plan section of the *Design Guidelines 2.1 Wood*:
“For deteriorated wood elements particularly vulnerable to ongoing deterioration—such as window sills and column bases and capitals—replacement with painted synthetic elements that replicate the original shape, texture, dimensions, and details may be a viable and cost-effective solution. The application of wood preservatives or the use of pressure-treated wood can also extend the life of wooden elements and surfaces. However, some pressure-treated wood must weather for six to twelve months before it is primed and painted.”
- 5* The above language regarding window sills and column bases was added in the 2017 update of the Design Guidelines based on Commission decisions made in the preceding decade.
- 6* The application states “Both houses’ original porch floors have been replaced over time.” No original flooring exists, since the Hall House porch had been replaced with a concrete porch and the Graves House porch flooring and sub-structure had to be removed when the building was recently moved from its original site.
- 7* The application includes an excerpt from the Secretary of the Interior’s Standards for Rehabilitation which focuses on replacement of materials and highlights the final sentence:

“Because this approach may not always be technically or economically feasible, provisions are made to consider the use of a compatible substitute material.”

- 8* The ten Standards for Rehabilitation, commonly known as the Secretary of the Interior’s Standards, are on page 13 of the Design Guidelines. Standards 5 and 6 address replacement materials.
- 9* Two pages were provided in the application about wood as a replacement material from Preservation Brief 45: Preserving Historic Wood Porches. From paragraph three of that document, under the Wood Selection heading: “The downside to using vertical grain boards is the cost, which tends to be as much as two to three times the price of flat grain lumber in the same grade and species. However, this expense is typically recovered through lower maintenance costs over the years. Thus, a decay-resistant, high-grade, vertical grain lumber is the best choice for the replacement of deteriorated porch elements, particularly flooring, stairs and milled elements such as balusters and moldings.”
- 10* Also from Preservation Brief 45, paragraph two under the Plastic and Composites: “The historical significance of a particular property and its porch influences decisions regarding possible use of substitute materials. In general, greater emphasis is placed on authenticity and material integrity when maintaining and repairing individually significant historic properties. However, a front porch that is repeated on rowhouses may be one of the defining characteristics of the historic district and thus of importance to the entire streetscape. So, too, can the location and appearance of a porch influence material decisions, as with, for example, a prominent front porch with ornate detailing as opposed to a small porch over a rear door.”
- 11* The application also includes a letter from the Louisiana Division of Historic Preservation authorizing the use of PVC flooring for Oak Alley, a National Historic Landmark. From that letter: “...we believe that the Aeratis Flooring Product that you showed to the staff would, *when painted*, be a suitable replacement material for the wood boards.”
- 12* Photographs were provided of both houses both before and after the moves.
- 13* Photographs were also proved of porch floors in Oakwood demonstrating how they weather over time. No addresses were provided for the photos, although the application states they are all in the same block.

14* The proposed PVC material will be painted, be of the same dimensions as the approved wood flooring, has a smooth surface, and is tongue-and-groove.

15* Specifications were included in the application for the proposed Aeratis Traditions PVC flooring material.

16* A composite material has routinely been approved for rear decks in historic districts, including for the rear deck that will connect the Hall and Graves Houses (COA #124-17-CA).

17* Samples were provided of both the standard yellow pine tongue-and-groove material and the Aeratis Traditions PVC tongue-and-groove material. Both were painted to show the final painted finish intended. Paint colors were addressed in a prior COA application.

Staff suggests that the committee discuss the use of the substitute PVC material for porch flooring.

Staff Contact: Melissa Robb, melissa.robbs@raleighnc.gov



Certificate of Appropriateness | Application

Development Services Customer Service Center • One Exchange Plaza, Suite 400 | Raleigh, NC 27601 | 919-996-2495

This form can be submitted in person or via USPS at the above address.

Type or print the following:	
Applicant name: 814 Oberlin Rd - Preservation NC Offices	
Mailing address: 222 W. Hargett St.	
City: Raleigh	State: NC
Zip code: 27605	
Date: 3/11/2019	Daytime phone #: (919) 832-3652
Email address: mhoward@presnc.org	
Applicant signature: <i>[Signature]</i>	
<input type="checkbox"/> Minor work (staff review) – one copy Major work (COA committee review) – ten copies <input type="checkbox"/> Additions > 25% of building sq. footage <input type="checkbox"/> New buildings <input type="checkbox"/> Demolition of building or structure <input checked="" type="checkbox"/> All other <input type="checkbox"/> Post approval re-review of conditions of approval	<p style="text-align: center;">Office Use Only</p> Transaction #: <u>589150</u> File #: <u>COA-0031-2019</u> Fee: <u>\$152.00</u> Amount paid: <u>\$152.00</u> Received date: <u>3/12/19</u> Received by: <u><i>[Signature]</i></u>
Property street address: 814 Oberlin Rd	
Historic district: Oberlin Village (pending HOD-G)	
Historic property/Landmark name (if applicable): Rev. Plummer T. Hall House + Willis Graves House	
Owner name: Preservation NC	
Owner mailing address: 222 W Hargett St.	

For applications that require review by the COA Committee (major work), provide addressed and stamped envelopes for owners for all properties with 100 feet on all sides of the property, as well as the property owner.

Property Owner Name & Address	Property Owner Name & Address
222 W Hargett St	806 Oberlin Rd
802 Oberlin Rd	817 Oberlin Rd
910 Oberlin Rd	815 Oberlin Rd
801 Oberlin Rd	818 Oberlin Rd

I understand that all major work applications that require review by the Raleigh Historic Development Commission's COA Committee must be submitted by 4 p.m. on the date of the application deadline; otherwise, consideration will be delayed until the following committee meeting. An incomplete application will not be accepted.

Will you be applying for rehabilitation tax credits for this project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Did you consult with staff prior to filing the application? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Office Use Only Type of work: <u>57</u>
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Design Guidelines: please cite the applicable sections of the design guidelines (www.rhdc.org).		
Section/Page	Topic	Brief description of work (attach additional sheets as needed).
2.1/38	Wood	proposing to change material of front porch for both houses to a pvc T+G porch floor

Minor Work Approval (office use only)

Upon being signed and dated below by the Planning Director or designee, this application becomes the Minor Work Certificate of Appropriateness. It is valid until _____.

Please post the enclosed placard form of the certificate as indicated at the bottom of the card. Issuance of a Minor Work Certificate shall not relieve the applicant, contractor, tenant, or property owner from obtaining any other permit required by City Code or any law. Minor Works are subject to an appeals period of 30 days from the date of approval.

Signature (City of Raleigh) _____ Date _____

To be completed by applicant			Office Use Only		
	Yes	N/A	Yes	No	N/A
Attach 8-1/2"x11" or 11"x17" sheets with written descriptions and drawings, photographs, and other graphic information necessary to completely describe the project. Use the checklist below to be sure your application is complete. <u>Minor Work</u> (staff review) – 1 copy <u>Major Work</u> (COA Committee review) – 1 copy (10 copies will be required after initial staff review).	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Written description. Describe clearly and in detail the nature of your project. Include exact dimensions for materials to be used (e.g. width of siding, window trim, tree species, etc.)	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Description of materials (Provide samples, if appropriate)	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Color Photographs of existing conditions are required. Minimum image size 4" x 6" as printed. Maximum 2 images per page. Photos should be of each side of the house, fully show the yards, and include streetscapes.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Paint Schedule (if applicable)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Site Drawings. Required for projects that include any addition, demolition, fences, walls, or other landscape work. <ul style="list-style-type: none"> • <u>Plot plan</u> showing relationship of buildings, additions, sidewalks, drives, trees, property lines, etc. • Tree survey include size, species, and critical root zone for each tree over 8" diameter when measured 4' above ground level • Tree protection plan include material staging area, construction access, limits of disturbance, location of tree protection fencing • Grading plan • Dimensions shown on drawings and/or graphic scale (required) • 11"x17" or 8-1/2"x11" reductions of full-size drawings 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Architectural Drawings showing existing and proposed work (if applicable) <ul style="list-style-type: none"> • Plan drawings • Elevation drawings showing the façade(s). For additions, deck, and porches, include the grade. • Dimensions shown on drawings and/or graphic scale (required) • 11" x 17" or 8-1/2" x 11" reductions of full-size drawings. If reduced size is so small as to be illegible, make 11" x 17" or 8-1/2" x 11" snap shots of individual drawings from the big sheet. 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Stamped envelopes addressed to all property owners within 100 feet of property, on all sides of the property, as well as the property owner (required for Major Work). Use the <u>Label Creator</u> to determine the addresses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Fee (<u>See Development Fee Schedule</u>)	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1704045469
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1026 WASHINGTON ST
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306 MINTON VALLEY LN
CARY NC 27519-9105

1704043588
RARE OBERLIN INVESTMENTS LLC
306 MINTON VALLEY LN
CARY NC 27519-9105

1704044667
TROXLER, ROBERT E
1609 CANTERBURY RD
RALEIGH NC 27608-1107

1704044771
EDWARDS, KELLY G
903 OBERLIN RD
RALEIGH NC 27605-1132

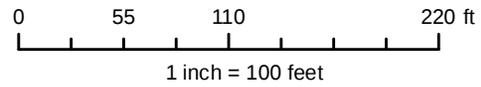
1704045385
OBERLIN BAPTIST CHURCH
806 OBERLIN RD
RALEIGH NC 27605-1131

1704046793
904 THE OBERLIN LLC
CHAD STELMOK
7100 SIX FORKS RD STE 100
RALEIGH NC 27615-6260

1704047529
904 THE OBERLIN LLC
CHAD STELMOK
7100 SIX FORKS RD STE 100
RALEIGH NC 27615-6260



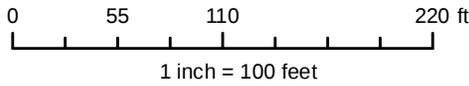
814 Oberlin Rd



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814 Oberlin Rd



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Proposed Change to Front Porch flooring material for 814 Oberlin Rd

Preservation NC would like to 1) propose an amendment to approved condition 4c of the COA 124-17-CA (Hall House front porch flooring) and 2) request approval for installing new porch flooring for the Graves House front, wrap-around porch.

Both houses' original porch floors have been replaced over time.

The Hall House porch floor had been previously replaced with a concrete slab, which caused significant termite damage along the front sill. The concrete porch has been removed.

The Graves House had tongue-and-groove porch flooring that has been patched in different sections with new-growth planks of varying widths (some T&G, some not). The outer edges of the flooring were in poor condition in several places, as shown in photograph #7, and the floor structure was in such poor condition that the housemover was unable to move it intact. Photograph #7 shows that the floor structure was sitting directly on the ground, where it sustained massive rot. Neither the porch structure nor its flooring was salvageable. The Graves House porch floor was therefore removed when the house was relocated.

Preservation NC is requesting to install a new porch floor using a synthetic material that installs and finishes similar to a new wood tongue-and-groove porch floor. Aeratis Traditions porch flooring is a pvc tongue-and-groove plank that is specifically designed to match the appearance of a painted wood tongue-and-groove porch floor. The pvc boards will be easier to maintain than real wood and does not present the main issues seen with real wood porch floors such as warping, cupping, buckling and rotting. Wood porch floors are hard to seal tight all the way around each board with paint or stain. Water finds those exposed areas and the looser grain of the new growth wood wicks it up and the wood deteriorates or buckles over time. See attached article comparing new growth versus old growth wood.

This is a common issue seen throughout a lot of historic districts, see photos of deteriorated porch floors here in Raleigh. These issues are similar to what people are seeing with new southern yellow pine siding, new growth wood being inferior to that of the historic old growth wood siding and wanting to move towards cementitious siding (Artisan Hardie Siding) for additions and accessory structures. The sills on new wood windows have been replaced with pvc sills in most window companies (Jeldwen Sitrine Ex for example) due to similar issues of not being able to withstand water penetration and rot. Decking is also a susceptible material to deterioration and rot; a move to composite decking has been seen throughout residential projects for many years now. All of which have been approved as acceptable materials for new fabric on historic houses by the RHDC. RHDC previously approved the use of composite decking for the back deck connecting the Hall and Graves Houses.

In its Preservation Brief 45, the National Park Service itself acknowledges the problems associated with using modern wood for porches:

The wood from trees cut one and two centuries ago was much different than most wood available today. The mature trees in older forests grew very slowly and, as a result, the annual

growth rings were very close together. Today, trees grown by commercial companies for their lumber are fast growing so they can be harvested sooner. As a result, commercially farmed trees have annual growth rings much further apart, resulting in the cut lumber being less strong and decay resistant than older timber. These differences in quality are one of the reasons it makes sense to save old wood when possible.

The Secretary of the Interior's Standards for Rehabilitation outlines what is acceptable for replacing a character-defining material on a historic structure when material must be replaced in its entirety.

Replace

Following repair in the hierarchy, guidance is provided for replacing an entire character-defining feature with new material because the level of deterioration or damage of materials precludes repair (for example, an exterior cornice; an interior staircase; or a complete porch or storefront). If the essential form and detailing are still evident so that the physical evidence can be used to re-establish the feature as an integral part of the rehabilitation project, then its replacement is appropriate. Like the guidance for repair, the preferred option is always replacement of the entire feature in kind, that is, with the same material. Because this approach may not always be technically or economically feasible, provisions are made to consider the use of a compatible substitute material.

Both front porch floors are missing in their entirety. Photographs show that they both had painted tongue-and-groove wood flooring at one time. The Headquarters Office of Preservation NC will be a highly visible historic property with large groups of people using the facility throughout its occupancy. Safety and welfare of those occupants is a priority. Buckling and rotting porch floors is not consistent with that priority and is one of the reasons why they are proposing using a synthetic porch floor. Maintenance costs are another reason for moving towards a synthetic material. Both houses have shallow eaves on the porches, and both porches will be subject to harsh weather conditions since they face west with limited shade. With both houses, the fact that little or no original porch decking remains intact shows that porch deterioration has long been a problem – even after they were built with heart-pine, old-growth decking.

In Preservation Brief #45, the National Park Service states:

Thus, when the historic porch contributes to the historic character of a building, the particular substitute material that is being considered should accurately match the appearance of the wooden feature being replaced. Composite materials that can be routed or shaped in the field to match specific pieces being replaced have greater potential for use in repairing a historic porch. Materials that cannot be shaped to match the visual appearance of the historic pieces being replaced usually are not suitable for use on historic buildings.

Substitute materials need to be finished to match the appearance of the historic elements being replaced. In nearly all cases, this means that the material should be painted, or where historically appropriate, stained as with some porch ceilings. While there are substitute materials being

marketed as pre-finished with either a plain flat surface or generic wood-grain texture, select those that can be painted or stained in the field.

Aeratis Traditions porch flooring has been recently approved in several significant historic districts in the US such as The Vieux Carré Commission (French Quarters) and the State of Louisiana along with 47 other states as a suitable replacement material for T+G wood on National Register structures. See the historic project information section for Aeratis provided in this application as well as the approval letter from the State of Louisiana.

The Aeratis Traditions flooring has been specifically made to be painted on site to match historic T+G wood porch flooring. Both materials have smooth surfaces and the boards fit tightly together when installed. Once painted onsite, Aeratis Traditions Flooring will match the appearance of the historic porch.

RHDC's own design guidelines allow for the use of "compatible substitute materials" where full replacement is required:

Design Guidelines

Section 2.1 Wood (2.1.4 and 2.1.5).

5. If replacement of an entire historic wooden feature is necessary, replace it in kind, matching the original in design, dimension, detail, material, and texture. Consider compatible substitute materials only if using the original material is not technically feasible.

The original old growth tongue and groove floors on both houses have been replaced over time. Replacement porch flooring is new growth-wood floor and technically not the same as the original material. New growth wood was grown to be harvested quickly and is made up of juvenile wood that tends to be less dense, more susceptible to warping and rot. The Aeratis Traditions T+G pvc porch flooring does not have the issues that new-growth wood porch flooring has. The pvc flooring will be the same dimension, be tongue-and-groove with similar detail and will be smooth-faced once painted onsite. Once installed and painted onsite, the pvc flooring will have the same appearance and stability as the original porch flooring.

Section 2.8 Entrances, Porches + Balconies

5. If replacement of an entire historic entrance, porch, or balcony feature is necessary because of deterioration, replace it in kind, matching the original in design, dimension, detail, texture, and material. Consider compatible substitute materials only if using the original material is not technically feasible.

Both houses' original porch floors have been replaced over time. The Hall House porch floor had been previously replaced with a concrete slab, and the Graves House had new growth wood, tongue-and-groove porch flooring that had been patched in different sections with varying widths of planks. The

porch floor decking and underlying structure of the Graves House was in such poor condition that it was removed when the house was relocated.

Preservation NC is requesting to install a new porch floor. Since the original fabric for the porch flooring is completely missing on both the Graves House and the Hall House, Preservation NC would like to use a synthetic material that installs and finishes similar to a new wood tongue-and-groove porch floor. The Aeratis Traditions T+G pvc porch flooring does not have the issues that new growth wood porch flooring has (see attached photos of current historic new growth wood porch floors in Oakwood). The pvc flooring will be the same dimension, be tongue-and-groove with similar detail and will be smooth faced once painted onsite. Once installed and painted onsite, the pvc flooring will have the same appearance and stability as the original porch flooring.

Hall House Existing Front Porch Photos



Hall House Existing Front Porch Photos



Graves House Existing Front Porch Photos



Graves House Existing Front Porch Photos



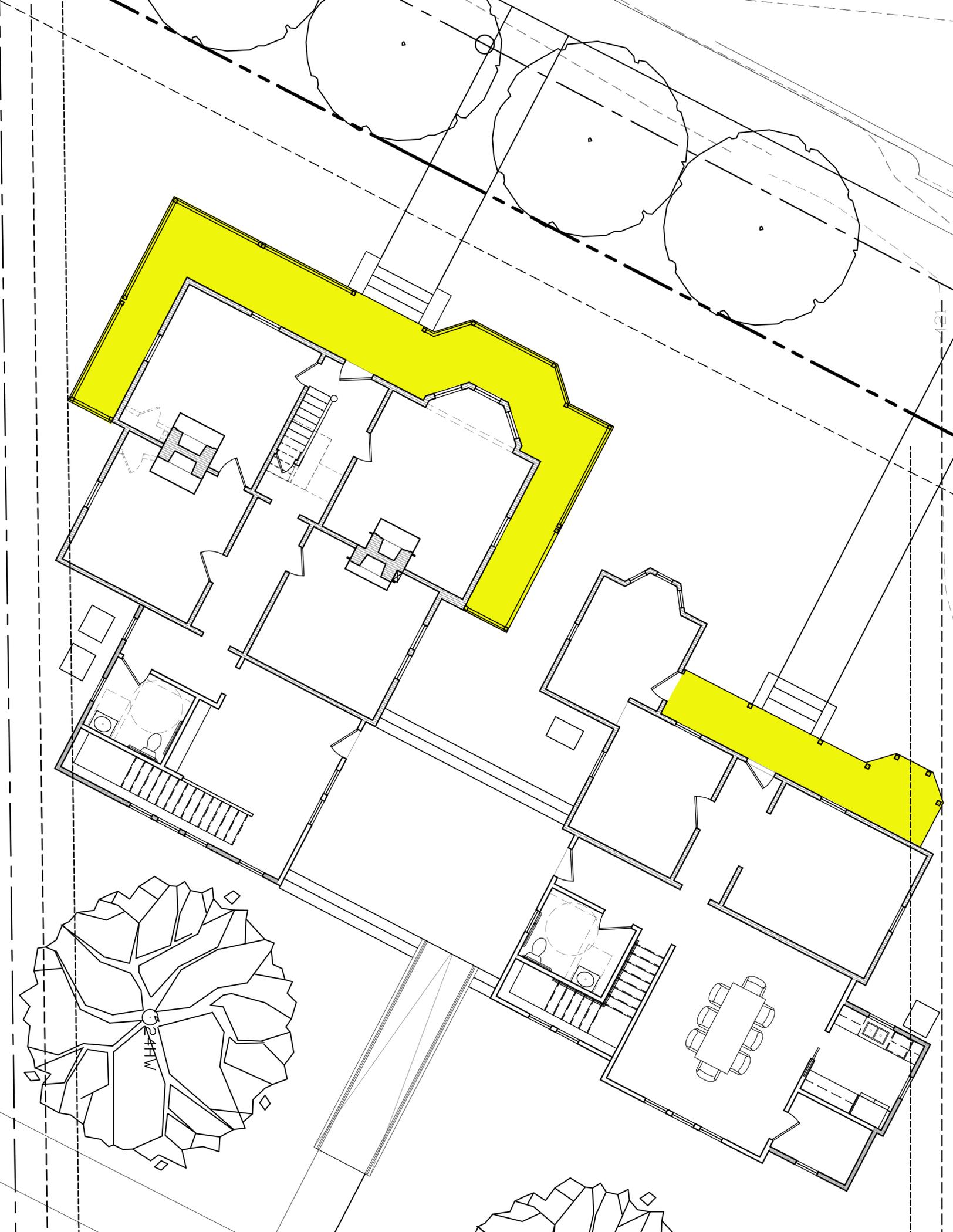
Hall House + Graves House Current Images

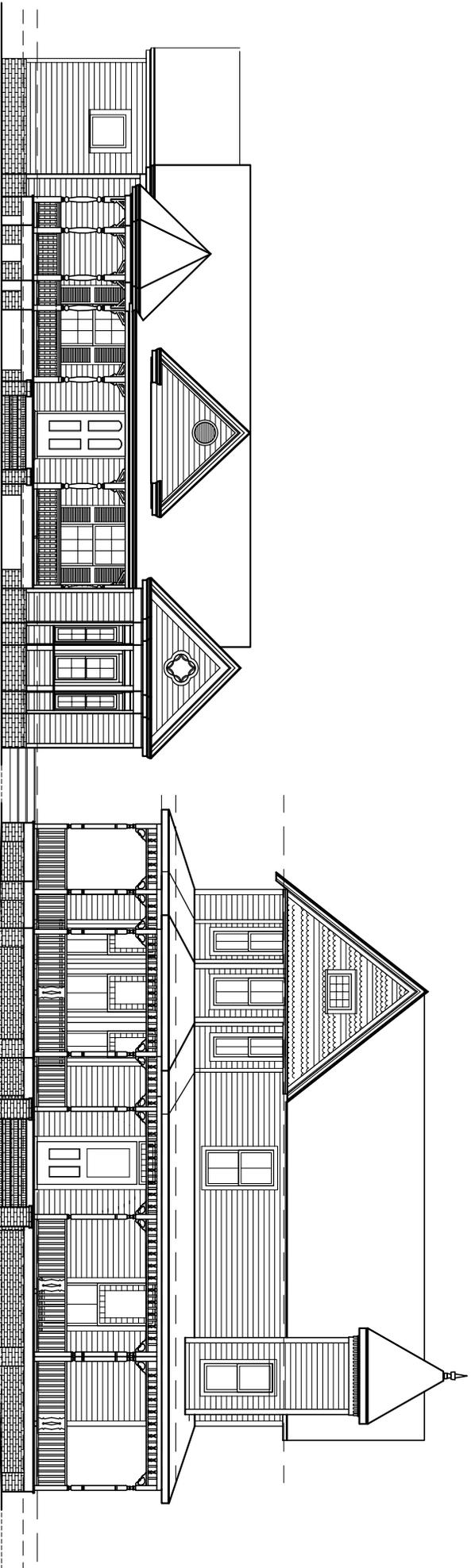
Front porches have been removed, original material porch flooring material was removed long ago. The replacement materials of both porches were not able to be moved with the houses. The Hall House had a concrete porch floor and the Graves House had a new growth hardwood floor that had deteriorated over time











814 Oberlin Rd - New Front Elevation

Scale - 3/32" = 1'-0"

PELL ST studio

Architect
Ashley Henkel Morris
306 Pell Street
Raleigh, NC 27604
919.696.0970



New Growth Wood Front Porches

Examples of wood porches and how they weather over time. Each photo is a different porch all of which are on one block in Oakwood



New Growth Wood Front Porches

Examples of wood porches and how they weather over time. Each photo is a different porch all of which are on one block in Oakwood



New Growth Wood Front Porches

Examples of wood porches and how they weather over time. Each photo is a different porch all of which are on one block in Oakwood



Pine

	Vertical-grain	\$\$\$	Excellent	Fair	Good	Excellent
Poplar	Firsts and Seconds	\$	Good	Poor	Good	Fair
American Mahogany	Clear	\$\$\$	Excellent	Excellent	Excellent	Good

This table summarizes the characteristics of just a few of the different species available, including the workability of the wood (indicating a better wood for decorative porch pieces), the resistance to decay (an important feature for all porch components), resistance to cupping (a wood highly resistant to cupping is a better choice for floor board replacement) and paint holding ability. The Cut or Grade is also listed, as a low-grade wood can perform very differently than a higher grade in the same species. Cost will vary depending on region and market supply and demand. In general, it is best to contact two or three local lumberyards to find the available woods with the characteristics needed in the local market. Source: Practical Restoration Report, Exterior Woodwork Details.

Replacement Materials

Wood

When selective replacement is necessary, the key to success is the selection of suitable wood. Dimensional stability, decay resistance and paint holding ability are wood characteristics that effect durability. Wood that expands and shrinks too much can cause paint to crack. Substances found naturally in certain kinds of wood repel fungi and insects that destroy wood. Selecting wood that is relatively stable and naturally decay resistant helps avoid problems.

The wood from trees cut one and two centuries ago was much different than most wood available today. The mature trees in older forests grew very slowly and, as a result, the annual growth rings were very close together. Today, trees grown by commercial companies for their lumber are fast growing so they can be harvested sooner. As a result, commercially farmed trees have annual growth rings much further apart, resulting in the cut lumber being less strong and decay resistant than older timber. These differences in quality are one of the reasons it makes sense to save old wood when possible.

Wood Selection: When choosing wood for repair and replacement work, the species, grade, grain and environmental impacts should be taken into consideration. This is especially applicable to historic porches because of their high exposure to the weather and vulnerability to decay. The best species are those with good natural resistance to decay, such as redwood, cypress, cedar or fir. A clear (knot free) grade of wood is best; however, if clear wood is not readily available or too expensive, a grade with small or tight knots is acceptable. Finally, the use of more stable vertical grain lumber is preferable to flat grain boards. Vertical grain lumber expands and contracts less with changes in moisture content, resulting in reduce warping and checks. Paint thus will hold better. The downside to using vertical grain boards is the cost, which tends to be as much as two to three times the price of flat grain lumber in the same grade and species. However, this expense is typically recovered through lower maintenance costs over the years. Thus, a decay-resistant, high-grade, vertical grain lumber is the best choice for the replacement of deteriorated porch elements, particularly flooring, stairs and milled elements such as balusters and moldings.

The best species to choose will vary depending on the region the house is located. For example, in the South, cypress is more available, making it the selection of choice in the region. Because of this wood's relative ease with which a carpenter can shape it, cypress is a good choice for replacing brackets and trim boards on a porch. In contrast, vertical grain Douglas fir is less workable, but is a very good choice for the replacement of porch floorboards in most climates. Although Douglas fir is from the Northwest, it is generally available throughout the country. For most protected trim boards on porches, white pine is a good choice as it is easy to work and is moderately decay resistant, especially if the wood is back-primed before installation. Availability of any specific wood will change annually based on market supply and demand.

Chemically Treated Wood: Chemical wood preservative treatments are available to resist insect and fungal attack, but care should be taken to avoid using ones that may cause environmental or health risks. Borate preservatives can be applied to surfaces or injected to penetrate and protect the entire volume of the wood. Preservatives with zinc naphthenate can be applied to the wood surface, where necessary, especially to protect hidden joinery and the end grains of wood. Water-repellants can also be used to help seal out moisture. Finally, primers and paints should be applied to both protect the wood and to maintain the historic character of the porch. Note that these treatments are different than those used on most pressure-treated wood, which is typically a plantation-grown southern pine of lower quality that is impregnated with chemicals. Pressure-treated lumber can be effective when used for hidden structural members like posts, joists and sills.

However, because typical pressure-treated wood is very susceptible to the deterioration of checks, warping and splitting, especially when left unpainted, it is not a good substitute for the better quality wood that is needed for visible finish porch parts.

Stock Components

For over a century, prefabricated architectural parts have been sold through catalogues or at home improvement stores. Some companies still make generic, stock architectural components in the same general sizes and designs as those that were first manufactured. These components can be available in both wood and substitute materials. Thus, it may be possible to replace a historic stock component, such as an architectural grade column, with a new prefabricated column that matches the original. Unfortunately, these replacement parts are not designed to match the historic parts of any particular porch. Because traditionally there were many different porch elements, a wide range of styles and considerable regional variations, stock replacement parts available today are not often found to match what is needed in a specific porch repair project. When faced with deterioration of a few porch parts, all the historic material should not be removed in favor of a readily available stock design that does not match the historic appearance. The expressed goal may be to create a porch with a "consistent look," but this approach diminishes the building's historic character and authenticity.

Plastic and Composites

A variety of modern materials are marketed today as a substitute for wood. They are usually composite materials typically in the form of plastic resins, including vinyl (PVC), fiber-reinforced polymers and polyester resin. There are other products on the market as well, including medium density wood fiberboard and composite fiber-cement boards. The market is ever changing with the introduction of new synthetic materials and the re-formulation of existing ones. The more costly synthetic products tend to offer the best potential for matching historic features while offering good durability. This means that potential cost savings over new wood tends to be more long term than immediate. Such products generally are not carried in local home improvement stores but rather are available from building supply companies or direct through catalog sales.

The historical significance of a particular property and its porch influences decisions regarding possible use of substitute materials. In general, greater emphasis is placed on authenticity and material integrity when maintaining and repairing individually significant historic properties. However, a front porch that is repeated on rowhouses may be one of the defining characteristics of the historic district and thus of importance to the entire streetscape. So, too, can the location and appearance of a porch influence material decisions, as with, for example, a prominent front porch with ornate detailing as opposed to a small porch over a rear door.

Thus, when the historic porch contributes to the historic character of a building, the particular substitute material that is being considered should accurately match the appearance of the wooden feature being replaced. Composite materials that can be routed or shaped in the field to match specific pieces being replaced have greater potential for use in repairing a historic porch. Materials that cannot be shaped to match the visual appearance of the historic pieces being replaced usually are not suitable for use on historic buildings.

Substitute materials need to be finished to match the appearance of the historic elements being replaced. In nearly all cases, this means that the material should be painted, or where historically appropriate, stained as with some porch ceilings. While there are substitute materials being marketed as pre-finished with either a plain flat surface or generic wood-grain texture, select those that can be painted or stained in the field.

When a substitute material is to be used in conjunction with existing or new wood material, it is important to consider the differences in expansion and contraction due to temperature and moisture changes. Before making a decision, it is also important to understand how a particular substitute material will age, what its maintenance requirements are, and how the material will deteriorate. For example, sunlight can break down exposed surfaces of plastic resins, so painting the surfaces is needed just as with wood. Low and medium density plastic foam parts are easily damaged by abrasion and physical damage, exposing the interior foam to weathering.

Wood porches are just that, porches made out of wood, just as a brick houses are made of brick and cast-iron porches are made of cast-iron. The type of materials used historically in the construction of a building helps define its character. Limited use of substitute materials that closely match missing or deteriorated features may not endanger this historic character, but wholesale replacement with substitute materials usually will.

Considerations for Contemporary Alterations

Enclosures

Much of the character of a historic open porch is clearly its openness. Therefore, in most cases, a historic open porch should not be enclosed. If a porch enclosure is being considered, its significance and location—as well as the nature of the planned enclosure—play key roles in whether it can be done without changing the porch's and building's historic character. While it

ÆRATIS



Whether you are restoring a National Register property or if you live in a historic district you will have to seek the approval of a committee to restore, renovate or replace the materials used on your front or back porch. In many cases your historic committee or your architectural review board is looking out for the best interest of your historic property. Their goal is to preserve the historic and architectural integrity of the property. In many cases they do a really great job. In some cases the phrase preserve or and maintenance are words that some committees

completely forget.

The reality of historic preservation is... in many cases, there are no longer acceptable wood materials available to use to preserve these historic properties. For example: Many individuals and contractors have contacted us over the years perplexed by their failing wood porch. The conversations usually start out something like this; "We are looking to replace our porch and we cannot figure out why we are having to do it again after only 4 years. You see, my grandmother had this house built and for almost 100 years the porch has never been replaced. About 4 years ago we installed a wood product similar to what was on it before and now we are replacing it again. Why did the previous porch last 100 years and these last one only 4 years.?"

The short answer is, the wood used to replace 100 year old porches is nothing like the dense vertical grain wood products used 100 years ago. On top of the density, we are no longer using lead based paints nor are we using strong treating chemicals. Wood today is cut as quickly as it can possibly be cut. It is rushed to the mill. It is cut down and ripped in to T&G profiles. It spends about 45 minutes being treated if it is pine and little to no time being treated if it is Douglas fir. All in all, wood is no longer what it used to be.

With this understanding, we created the Aeratis tongue and groove porch flooring line. Aeratis is exactly the same profile as wood was 100 years ago. It can be cut like wood. It can be routed like wood. It is installed easier and faster than wood. When the Traditions product line is painted, you cannot tell it is not wood. As seen to the right, when Aeratis Traditions is painted not only does it look like wood, will never buckle, cup, check, rot or deteriorate. If you use a recommended paint, the paint is free in the form of a rebate and the repaint cycles are typically every 7 to 10 years.

If you are looking to preserve your historic home or if you are on a committee and you are looking for a solution for inferior wood products, please contact us and we can help you.



Content is currently being added to this page. Please check back later if you cannot find what you are looking for...

French Quarter Resources – Aeratis Traditions has recently been approved by The **Vieux Carré** Commission. Click here for all resources and information about this approval.

Louisiana Resources – Approval by the State for National Register T&G wood replacement. [View](#)

HOW TO BUY AERATISOTHER

- Request Samples
- Aeratis Porch Gallery
- Request a Quote
- General Inquiries
- Find a Retail Location

TRADE PROFESSIONALS

- Architects
- Historic Projects
- Contractors & Installers
- Resellers
- Press Room
- Contact Us



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LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT
DIVISION OF HISTORIC PRESERVATION
September 14, 2007

ANGÈLE DAVIS
SECRETARY

PAM BREUX
ASSISTANT SECRETARY

Mr. Zeb Mayhew Jr.
Oak Alley Plantation
3645 Hwy 18
Vacherie, LA 70090

Re: Oak Alley Plantation
Replacement Gallery Flooring

Dear ~~Mr. Mayhew~~ *Zeb*

Thank you very much for inviting us to visit Oak Alley on September 12 to view such an innovative replacement product for the gallery.

As you know, Oak Alley is a National Historic Landmark and one of the most important architectural assets in our state. Changes to the historic material are not considered lightly. With that being said, we believe that the Aeratis Flooring Product that you showed to the staff would, *when painted*, be a suitable replacement material for the wood boards.

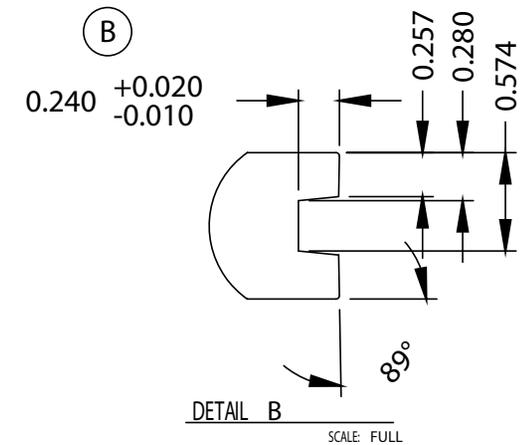
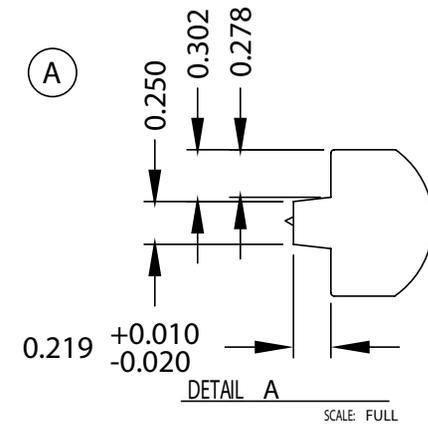
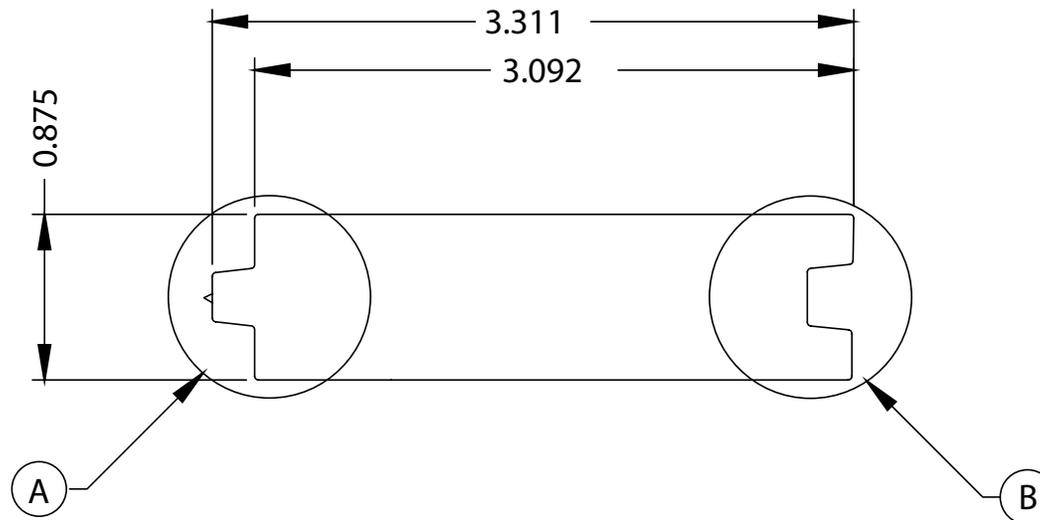
Standard 6 of the Secretary of the Interior's Standards for Rehabilitation states: *Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.* We believe that the product as proposed will meet this standard. Thankfully, tens of thousands of people visit Oak Alley every year, causing an extreme amount of wear and tear on traditional wood gallery floors. This plastic composite product will be able to withstand that amount of stress while maintaining a historically accurate appearance.

Thank you again for inviting us to such a lovely and important property, and know that we remain at your disposal. Please do not hesitate to contact me at (225) 342-8160 with any further questions.

Sincerely,

Alison F. Saunders
Tax Credit Coordinator
Division of Historic Preservation

Cc: Jessica Cleaver, Project Officer
Historic Buildings Recovery Grant Program



Product Data:

- Lengths:** 10', 12', 16' (1" longer than stated)
- Fastening:** Flooring nail/staples or trim-head screws
- Ventilation:** 0" / Ventilation not required
- Span:** 16" O.C. (Live load > 225 lbs p.s.f.)
- Color:** Paint Ready (5-A paint adhesion)
- Profile:** Double sided (Embossing on both sides)

Approved by:	Aeratis Porch Products
REV:	1.01
Date:	01/29/2015
Type:	DWG/DXF/PDF/AI

ÆRATIS®

PVC PORCH PRODUCTS

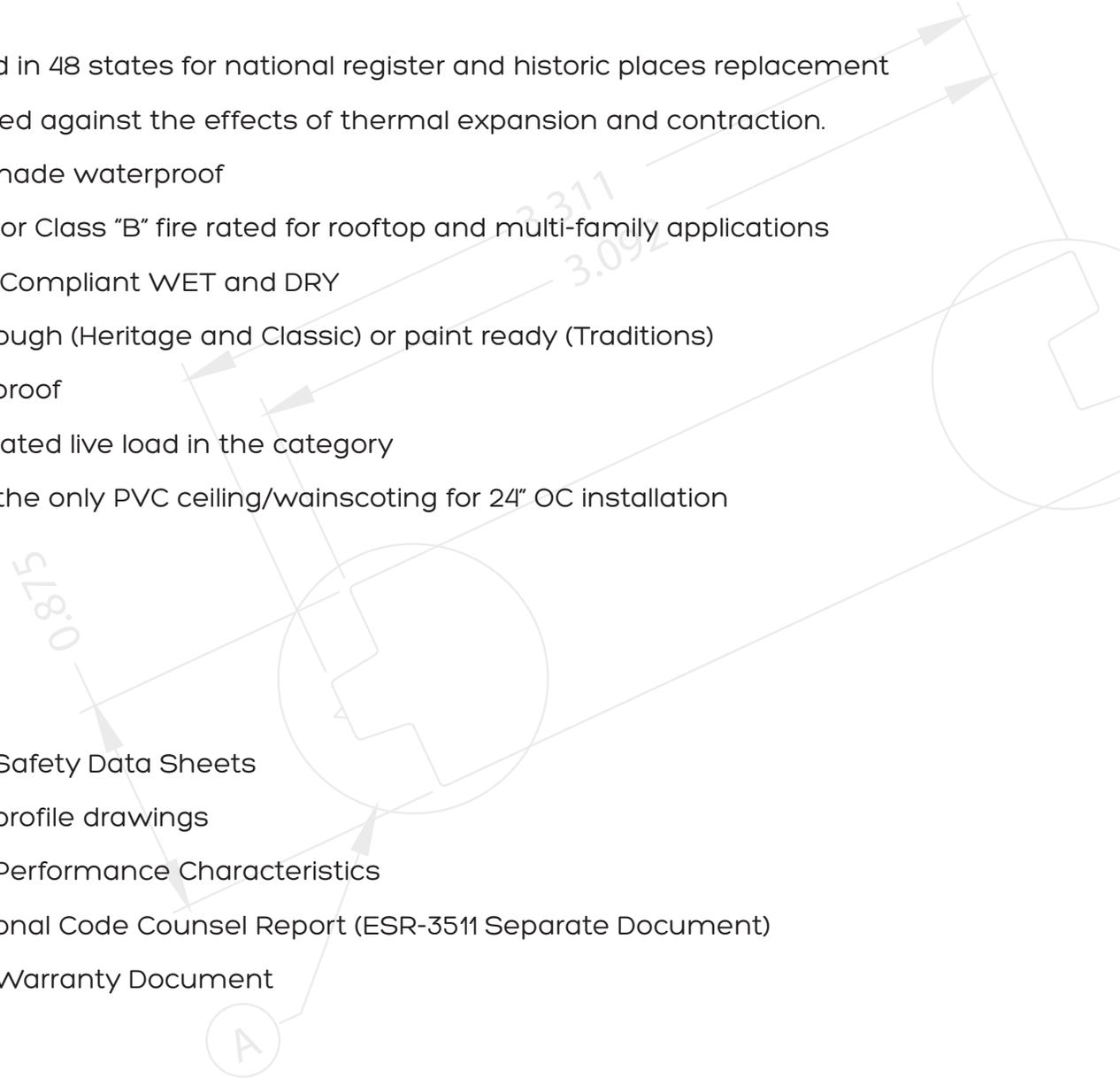
ARCHITECTURAL SUBMITTAL

Engineered as a true replacement for low density wood products and inferior composites. All products created by Aeratis have historical precedence and are engineered to fill a material performance void in the building industry.

- » Approved in 48 states for national register and historic places replacement
- » Warrantied against the effects of thermal expansion and contraction.
- » Can be made waterproof
- » Class "A" or Class "B" fire rated for rooftop and multi-family applications
- » ADA Slip Compliant WET and DRY
- » Color through (Heritage and Classic) or paint ready (Traditions)
- » Termite proof
- » Highest rated live load in the category
- » Offering the only PVC ceiling/wainscoting for 24" OC installation

Contents:

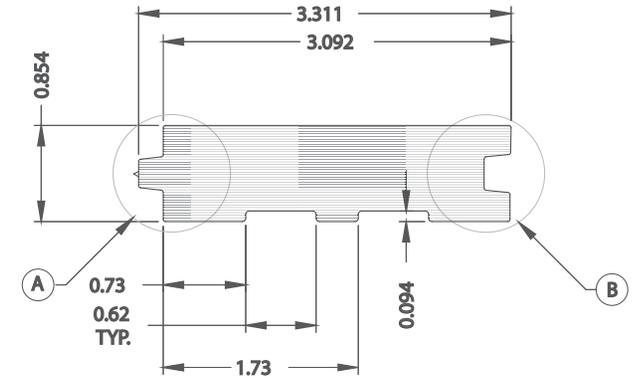
- » Material Safety Data Sheets
- » Product profile drawings
- » Product Performance Characteristics
- » International Code Counsel Report (ESR-3511 Separate Document)
- » Product Warranty Document


www.aeratis.com

Aeratis Classic Testing Data

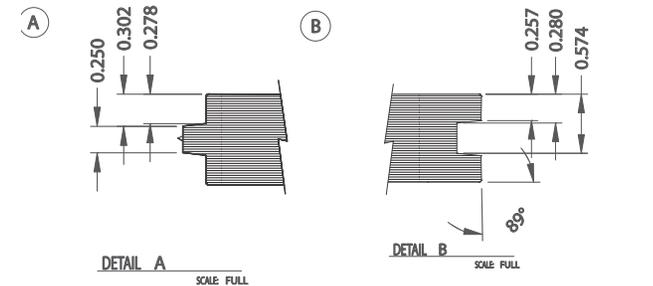
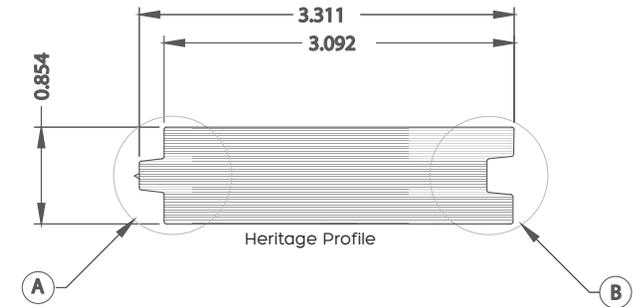
Performance Characteristic	ASTM Method	Results
Flame Spread	ASTM E84	Meets W.U.I. Requirements
ADA Slip Test	ASTM F1679	.82 dry/.72 wet
Coefficient of Expansion	ASTM D696	1.91 x 10 ⁻⁵ in/in/°F
Compression Parallel	ASTM D198	2605 psi
Shear	ASTM 143	2939 psi
Screw Withdrawal	ASTM D1761	806 lbs
Decay Resistance	ASTM D1413	No Decay
Termite Resistance	ASTM D3345	10 - Highest Rating
Weatherability - 2000 hours	ASTM D2565	91% of Baseline MOR
50 Cycle Freeze Thaw	AC 174	93% of Baseline MOR
Water Absorption	ASTM 570	1.21%
Modulus of Rupture	ASTM D6109	16" O.C. - 3149
Modulus of Elasticity	ASTM D6109	16" O.C. - 372,000

Aeratis Profile Details



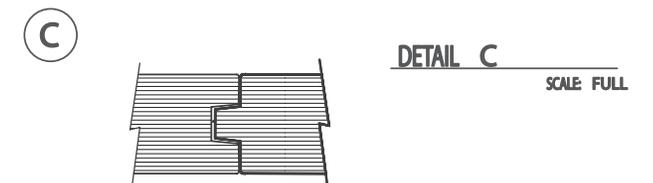
Aeratis Heritage Testing Data

Performance Characteristic	ASTM Method	Results
Flame Spread	ASTM E84	Class B or better
ADA Slip Test	ASTM F1679	.82 dry/.72 wet
Coefficient of Expansion	ASTM D696	1.91 x 10 ⁻⁵ in/in/°F
Compression Parallel	ASTM D198	2605 psi
Shear	ASTM 143	2939 psi
Screw Withdrawal	ASTM D1761	806 lbs
Decay Resistance	ASTM D1413	No Decay
Termite Resistance	ASTM D3345	10 - Highest Rating
Weatherability - 2000 hours	ASTM D2565	91% of Baseline MOR
50 Cycle Freeze Thaw	AC 174	93% of Baseline MOR
Water Absorption	ASTM 570	1.21%
Modulus of Rupture	ASTM D6109	16" O.C. - 3,000
Modulus of Elasticity	ASTM D6109	16" O.C. - 370,000



Aeratis Traditions Testing Data

Performance Characteristic	ASTM Method	Results
Flame Spread	ASTM E84	Class B or better
Coefficient of Expansion	ASTM D696	1.91 x 10 ⁻⁵ in/in/°F
Compression Parallel	ASTM D198	2605 psi
Shear	ASTM 143	2939 psi
Screw Withdrawal	ASTM D1761	806 lbs
Decay Resistance	ASTM D1413	No Decay
Termite Resistance	ASTM D3345	10 - Highest Rating
Water Absorption	ASTM 570	1.21%
Modulus of Rupture	ASTM D6109	16" O.C. - 2300
Modulus of Elasticity	ASTM D6109	16" O.C. - 362,000



Technical Preservation Services



[Home](#) > [The Standards](#) > [Four Approaches to the Treatment of Historic Properties](#) > Rehabilitation

COA-0031-2019
Staff Evidence

Rehabilitation as a Treatment

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.



Standards for Rehabilitation

Please note: For the [Historic Preservation Tax Incentives Program](#) use the [Standards for Rehabilitation](#) that are codified separately in 36 CFR 67 and are regulatory for the review of rehabilitation work for that program.

The Standards will be applied taking into consideration the economic and technical feasibility of each project

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations or related new construction will not destroy historic materials, features and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.